WHAT IS CLAIMED IS:

1. A method of avoiding adjacent channel interference and reducing disconnections caused thereby during communication between a mobile device (102) and a base station (202) that communicate via a communication channel in a wireless communication network comprising the steps of:

measuring (302) received power of a received signal at a point before the received signal is filtered by at least one selected filter within the mobile device (102) for providing a received power measurement signal having a magnitude indicative thereof;

filtering (304) the received signal for providing a filtered signal;

remeasuring (306) post-filter power of the filtered signal for providing a filtered power measurement signal having a magnitude indicative thereof;

estimating (308) from the received power measurement signal and the filtered power measurement signal a power ratio having a magnitude indicative of a degree to which the adjacent channel interference exceeds communication channel power; and

requesting (314) a handover to an alternative communication channel available for data transmission to and from the mobile device via said alternative communication channel, if (310) said power ratio is greater than a certain threshold,

wherein the steps of measuring (302), filtering (304), remeasuring (306) and estimating (308) are performed while the mobile device is capable of using the communication channel for receiving and transmitting data.

2. The method of claim 1, wherein the steps of measuring (302), filtering (304) and remeasuring (306) are performed within the mobile device.

3. The method of claim 1, wherein the received signal is digital, having previously been converted from analog to digital, and wherein the at least one selected filter comprises a digital pulse shaping filter.

4. The method of claim 1, wherein the received signal has in-phase and quadrature components.

5. The method of claim 1, wherein the at least one selected filter comprises a digital pulse shaping filter, and also wherein the step of measuring (302) received power is preceded by the steps of:

processing the received signal so that the received signal comprises in-phase and quadrature components;

filtering the received signal by means of at least one analog filter; and

converting the received signal from analog to digital.

6. The method of claim 1, wherein the alternative communication channel is adjacent to the communication channel and is one of a group of mutually adjacent frequency channels which are associated with the base station throughout base station coverage area, and also wherein the group of mutually adjacent frequency channels is different from all other groups of mutually adjacent frequency channels associated with other base stations having other coverage areas overlapping at least partly with the base station coverage area.

7. The method of claim 6, wherein the step of remeasuring (306) post-filter power occurs before despreading occurs and before decoding occurs, and wherein all steps occur within a wideband code division multiple access system.

8. The method of claim 1, wherein the handover will cause the mobile device (102) to stop communicating with the base station (202) and start communicating with a different base station (204).

9. The method of claim 1, wherein the base station (202) activates a handover operation after receiving a handover request from the mobile device (102), and wherein activation of said handover operation will change the communication

between the mobile device (102) and the base station (202) to the alternative communication channel.

10. The method of claim 6, wherein at least one of the other coverage areas is a microcell situated completely within the base station coverage area.

11. The method of claim 1, wherein the method occurs in parallel with normal reception and normal communication capacity on the communication channel.

12. The method of claim 1, wherein the certain threshold is less than or equal to a maximum ratio of adjacent channel interference to communication channel power tolerated by the mobile device (102) with negligible risk of disconnection.

13. The method of claim 6, wherein all steps occur before decoding occurs, wherein all steps occur within a code division multiple access system, wherein despreading occurs before the step of remeasuring (306) post-filter power, and wherein despreading occurs after the step of measuring (302) received power.

14. The method of claim 3, wherein the step of estimating (308) the ratio of the adjacent channel interference to the communication channel power is also dependent upon analog filter attenuation which occurs in the mobile device prior to the received signal being provided by the analog-to-digital-converter, and wherein the analog filter attenuation is known from production tuning.

15. The method of claim 6, wherein the data transmission between the mobile device (102) and the base station (202) employs uplink frequencies which are separated from downlink frequencies by a duplex spacing.

16. The method of claim 2, wherein all steps are accomplished by the mobile device.

17. The method of claim 2, wherein the power ratio is reported by the mobile device (102) to the base station (202), and wherein the handover is requested by a component of the wireless communication network other than the mobile device.

18. A mobile device (102) for communicating with a base station (202) in a wireless communication network, while avoiding adjacent channel interference and reducing disconnections caused thereby, comprising:

a digitized signal power monitor (642) responsive to a digital received signal (640) for providing a digital received power measurement signal (644) having a magnitude indicative of communication channel power combined with a remainder of adjacent channel interference;

at least one selected filter (643) responsive to the digital received signal (640) for providing a digitally filtered signal (647);

a post-filter signal power monitor (652) responsive to the digitally filtered signal (647) for providing a digital filtered power measurement signal (654) having a magnitude indicative of the communication channel power; and

an algorithm module (646) responsive to the digital received power measurement signal (644) and the digital filtered power measurement signal (654) for providing a handover information signal (622) having a magnitude which will be used outside the mobile device to determine whether a handover will occur.

19. The mobile device of claim 18, wherein the magnitude of the handover information signal (622) is indicative of a handover request if an estimated power ratio of adjacent channel interference to the communication channel power is greater than a certain threshold of the mobile device.

20. The mobile device of claim 18, wherein the magnitude of the handover information signal (622) is indicative of an estimated power ratio of adjacent channel interference to the communication channel power.

21. The mobile device of claim 20, wherein the magnitude of the handover information signal (622) is further indicative of a maximum acceptable upper threshold for the estimated power ratio.

22. The mobile device of claim 20, wherein the handover will occur if the estimated power ratio is greater than a certain threshold established by a component of the wireless communication network other than the mobile device.

23. The mobile device of claim 22, wherein the certain threshold is variable from a first base station to a second base station and from a first time to a second time.

24. The mobile device of claim 18, further comprising:

a demodulator (630) responsive to a once-filtered signal (628) for providing a demodulated signal (632) having in-phase and quadrature components;

at least one analog filter (634) responsive to the demodulated signal (632) for providing a twice-filtered signal (636); and

an analog-to-digital converter (638) responsive to the twice-filtered signal (636) for providing the digital received signal (640),

wherein the at least one filter comprises a digital pulse shaping filter (643).

25. The mobile device of claim 18, wherein the requested frequency channel is one of a group of mutually adjacent frequency channels which are associated with the base station (202) throughout base station coverage area, the group of mutually adjacent frequency channels being different from all other groups of mutually adjacent frequency channels associated with other base stations having other coverage areas that overlap at least partly with the base station coverage area.

26. The mobile device of claim 25, further comprising:

a despreader (648) responsive to the digitally filtered signal (647) for providing a despread signal (650); and

a decoder (656) responsive to the despread signal (650) for providing an output signal (658),

wherein the wireless communication network employs wideband code division multiple access.

27. The mobile device of claim 24, wherein the handover will cause the mobile device (102) to stop communicating with the base station (202) and start communicating with a different base station (204).

28. The mobile device of claim 18, wherein the elements claimed in claim 18 allow the mobile device (102) to operate uninterrupted with continuous reception capacity and continuous communication capacity prior to handover.

29. The mobile device of claim 19, wherein the certain threshold is less than or equal to a maximum ratio of adjacent channel interference to communication power tolerated by the mobile device (102) with negligible risk of disconnection.

30. The mobile device of claim 24, wherein the algorithm module (646) is responsive to analog filter attenuation magnitude which is known from production tuning for determining whether the estimated power ratio of the adjacent channel interference to the communication channel power is greater than the certain threshold.

31. The mobile device of claim 25, wherein the mobile device (102) employs uplink frequencies which are separated from downlink frequencies by a duplex spacing.

32. The mobile device of claim 18, wherein the handover information signal (622) has a magnitude indicative of a requested frequency channel that is untested by the mobile device (102) and to which a handover is requested.

33. A system for avoiding adjacent channel interference and reducing disconnections caused thereby during communication via a communication channel in a wireless communication network comprising:

a mobile device (102) responsive to a received signal transmitted over a wireless interface for providing a handover information signal having a magnitude indicating at least a power ratio of adjacent channel interference to communication channel power; and

a radio network subsystem (128) for providing the received signal to the mobile device (102), and being responsive to the handover information signal by switching the communication to an alternative communication channel if the power ratio exceeds a certain threshold,

wherein the power ratio is determined inside the mobile device by measuring signal power before and then after the received signal is filtered by at least one selected filter.

34. The system of claim 33, wherein the certain threshold is a constant associated with the mobile device.

35. The system of claim 33, wherein the certain threshold is determined by the radio network subsystem (128).

36. The system of claim 33, wherein the at least one selected filter comprises a digital pulse shaping filter.

37. The system of claim 33, wherein the alternative communication channel connects the mobile device (102) to the radio network subsystem (128).

38. The system of claim 33, wherein the alternative communication channel connects the mobile device (102) to a different radio network subsystem.